

REMARKS/ARGUMENTS

The final office action of June 11, 2003 has been carefully reviewed and these remarks are responsive thereto. Reconsideration and allowance of the instant application are respectfully requested. Claims 1-11 remain pending; claims 12-20 are canceled; and claims 21-31 have been withdrawn as directed to a non-elected species.

Applicants have amended claim 1 to recite a second concave portion formed in the semiconductor substrate and having a depth from a top surface of the semiconductor substrate, substantially equal to a depth of the first concave portion. Applicants submit that the addition of the term “substantially” is for clarification purposes and does not raise new issues as the action contends that the claim language includes the phrase substantially.

Claims 1-11 stand rejected under 35 U.S.C. § 103(a) as being obvious over the combination of U.S. patent no. 5,629,227 to Chen, U.S. patent no. 6,130,469 to Bracchitta et al. (“Bracchitta”), and Wolf, S., “Silicon Processing of the VLSI Era,” Vol. 2 Process Integration (“Wolf”). Applicants respectfully traverse this rejection.

The action continues to maintain the rejection of claims 1-11 made in the office action of September 6, 2002. However, none of Chen, Bracchitta or Wolf alone or in combination (if proper) teaches or suggests first and second concave portions as called for in claim 1. The action appears to rely on Chen to show the claimed concave portions.

The action states that claim 1 requires “the first and second concave portions to have substantially the same depth.” To show this alleged feature of claim 1, the action contends that the depths of protection cell 10 and antifuse cell 12 of Chen are substantially the same.

In this regard, the action avers that protection cell 10 of Chen “has more than one portion, one of which is the same depth as the other concave portion 12, as recited, and a deeper portion.” Applicants respectfully disagree with this characterization of the protection cell 10. Chen discloses forming a stepped section at the bottom surface of the protection cell 10. Thus, the protection cell 10 includes a portion with depth y, which is different from the depth x of antifuse cell 12. Accordingly, protection cell 10 and antifuse cell 12 cannot have substantially equal depths as long as concave portion 10 includes a portion with depth y.

In addition, Chen's protection cell 10 has three walls forming boundaries for concave regions. One pair of walls encompasses two outer walls and forms a concave region defining the entire protection cell, the concave region having a variable depth from the top surface of the semiconductor substrate. Hence, this concave region does not have a depth substantially equal to a depth of the antifuse cell 12. Another concave region of a second pair of walls is formed within the first concave region and includes one of the outer walls and an internal wall formed from the corner 20 to the bottom of the protection cell 10, this concave region also has a variable depth, and further does not even extend to a top surface of the semiconductor substrate. Clearly, Chen neither teaches nor suggests a second concave portion formed in the semiconductor substrate and having a depth from a top surface of the semiconductor substrate, substantially equal to a depth of the first concave portion as called for in claim 1. Neither Bracchitta nor Wolf remedies the defects of Chen. Thus, the combination of the applied art, even if proper, does not result in the claim 1 invention.

To the extent that the action contends that the meaning of the term "substantially" is not understood. Applicants respectfully submit that one skilled in the art would appreciate that "substantially" means largely or essentially, but not necessarily exactly that which is specified. In this instance, the depth may not be exactly equal, but is largely or essentially equal. This definition accounts for the physical difficulty in making things exactly the same depth.

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Amendment dated August 21, 2003
Reply to Office Action of June 11, 2003

CONCLUSION

It is believed that no fee is required for this submission. If any fees are required or if an overpayment is made, the Commissioner is authorized to debit or credit our Deposit Account No. 19-0733, accordingly.

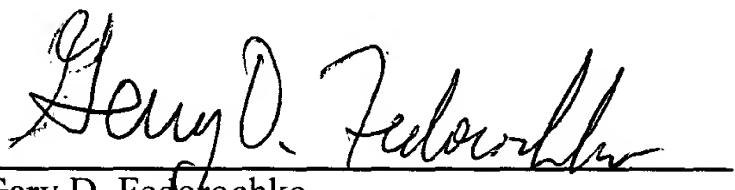
All rejections having been addressed, applicants respectfully submit that the instant application is in condition for allowance, and respectfully solicit prompt notification of the same.

Respectfully submitted,

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